

Claims

1. A servo-valve (3) for a fuel injector (1) equipped with a pressure booster (2) whose working chamber (7) is separated from a differential pressure chamber (8) by a booster piston (10, 11); an actuator (4) can connect a control chamber (33) of the servo-valve (3) to a low-pressure return (35); and the differential pressure chamber (8) of the pressure booster (2) can be connected to a low-pressure return (37) or to a return system in which the returns (35, 37) are connected to each other, characterized in that a first servo-valve piston (30), which has a surface (45) continuously acted on by system pressure, is provided with a first sealing seat (38), and a second servo-valve piston (41), which is embodied in the form of a sealing sleeve, is accommodated in an axially sliding fashion on the first servo-valve piston (30) and, together with a valve housing (29), constitutes a second sealing seat (50) so that after the second sealing seat (50) is closed by the second servo-valve piston (41), the first servo-valve piston (30) opens the first sealing seat (38) further.
2. The servo-valve according to claim 1, characterized in that the first sealing seat (38) is embodied on a first shaft region (46) of the first servo-valve piston (30).
3. The servo-valve according to claim 1, characterized in that the first servo-valve piston (30) has a second shaft region (47) whose piston end is provided with a stop (49) oriented toward the second servo-valve piston (41).

4. The servo-valve according to claim 1, characterized in that the first servo-valve piston (30) has a third shaft region (48) on which the second servo-valve piston (41), which is embodied in the form of a sealing sleeve, is accommodated in a spring-loaded fashion.

5. The servo-valve according to claim 4, characterized in that the third shaft region (48) of the first servo-valve piston (30) protrudes into the working chamber (7) of the pressure booster (2).

6. The servo-valve according to claim 4, characterized in that the third shaft region (48) of the first servo-valve piston (30) has an end surface (45), which is oriented toward the working chamber and is acted on by the system pressure in the working chamber (7).

7. The servo-valve according to claim 1, characterized in that the first servo-valve piston (30) has a through conduit (31) whose end oriented toward the control chamber (33) is provided with a second throttle restriction (32).

8. The servo-valve according to claim 1, characterized in that a line that exerts pressure on the differential pressure chamber (8) of the pressure booster (2) and a line (28) that relieves the pressure in the differential pressure chamber (8) feeds into a servo-valve housing (29) of the servo-valve (3) at a junction point (40) that lies between the first sealing seat (38) and the second sealing seat (50).

9. The servo-valve according to claim 1, characterized in that the second sealing seat (50) is embodied in the form of a flat seat between the servo-valve housing (29) and the second closing piston (41).

10. The servo-valve according to claim 1, characterized in that the second sealing seat (50) is embodied in the form of a conical seat between the servo-valve housing (29) and the second closing piston (41).

11. The servo-valve according to claim 9, characterized in that the second sealing seat (50), which is embodied in the form of a flat seat, is provided between the servo-valve housing (29) and a contoured piston surface (44) of the second servo-valve piston (41).